REMARKS

This Amendment and Response is responsive to the Office Action mailed August 28, 2006. In that action: claims 1, 15-24, and 43-51 were pending, the remainder having been withdrawn; claims 1, 15-17, and 19-23 were rejected under 35 USC 103(a) as unpatentable over Popovich (WO 00/07058); claims 43, 44, and 48-50 were rejected under Section 103(a) as unpatentable over Williams (USPN 5,757,339); and claims 18, 24, 46, 47, and 51 were objected to as being dependent upon a rejected claim but allowable if amended into independent form. It is not clear what the status of claim 45 is. Reconsideration of the rejection of the rejected claims is hereby requested.

Claim 43 has been amended to clarify its meaning.

On page 2 of the Office Action, in the "Response to Arguments" section, it is stated that "Applicant argues 615 is a real image on a diffusion screen and thus Popovich fails to provide virtual image." To the contrary, although Applicants do indeed argue that 615 is a real image, at no point have Applicants ever argued that Popovich fails to provide a virtual image. Thus, it appears that the Examiner does not understand Applicants' arguments. We will try again to explain this.

Popovich clearly does disclose systems in which a virtual image appears to a viewer (e.g., Figure 2A and accompanying text at page 12, line 22 - page 13, line 15). Clearly, in Figure 2A a viewer on the left side of the drawing looking toward the mirror 203 would see a virtual image 204 that appears to be located at a location on the right side of the drawing, behind the mirror. This virtual image 204 is created by the mirror 203 from an input image 202 that is on the same (left) side of the mirror as the viewer, and below the viewer in the figure.

In Figure 6A of Popovich, a viewer to the left of the figure that is looking toward the

display screen 609 (composed of a holographic mirror 601 and a holographic diffuser 602) will see a virtual image (not shown in the figure) that appears to be located to the right of (and thus on the side opposite the viewer of) the display screen 609. This virtual image is a virtual image of the input image 615 that is produced on a passive diffuser 603. In Figure 6A, however, the input image 615 that is formed on the passive diffuser 603 *is clearly a real image*.

Applicant submits that "virtual image" is a term well understood in the art to preclude its being a real image formed on a diffusive screen. For example, in Modern Optical Engineering by Warren J. Smith (McGraw-Hill, Boston, 1990), the author states on p. 10:

> Thus a virtual image may be observed directly or may serve as a source to be reimaged by a subsequent lens system, but it cannot be produced on a screen.

Similarly, in Introduction to Physics for Scientists and Engineers by Frederick J. Bueche (McGraw-Hill, New York, 1986) we find (p.624):

> This type of image, one through which the observed rays do not actually pass, is called a virtual, or imaginary, image. In other words, the rays reaching the eye do not really come from the point they seem to come from. There is no possibility whatsoever that a sheet of paper placed at S′ behind the mirror would have a lighted object appear on it.

Most succinctly, perhaps, in Fundamentals of Optics, by Francis A. Jenkins and Harvey E. White (McGraw-Hill, New York, 1950) is stated (p. 42):

> A virtual image cannot be formed on a screen.

Copies of each of these references are attached for the Examiner's convenience.

In light of the above well-accepted definition of virtual image, the teachings of Popovich should be reconsidered by the Examiner. Once reconsidered, it should be understood that a real

image is produced on the passive diffuser 603, and a virtual image of this real image can be seen by the viewer when looking toward the display screen 609, in the location described in Fig. 2A, that is on the side of screen/holographic-mirror 609 opposite the viewer. The claimed invention differs from Popovich in that that "the light that forms the virtual image proceeds from the image-generating arrangement to the viewer without being scattered by a diffusive screen."

On page 4 of the Office Action, there is an unintelligible sentence: "However, Popovich fails to specifically disclose an embodiment where a diffusive screen it placed in the path of the light that forms the virtual image." (emphasis added) The word "it" does not make sense in this sentence and it is difficult for the Applicants to understand the Examiner's rejection. One possibility is that the Examiner intended the words "is not" in place of the word "it." If so, the sentence would have read "However, Popovich fails to specifically disclose an embodiment where a diffusive screen is not placed in the path of the light that forms the virtual image." (emphasis added) Under that interpretation of the garbled sentence above, the Applicants would be in complete agreement.

The Examiner appears to next argue that it would have been obvious to remove the diffusive screen 603. A simple examination of Figure 6A, however, reveals that if the diffusive screen 603 were removed, little to no light from the optics 605 would impinge upon the display screen 609, and a viewer standing to the left of the figure and looking toward the display screen would see no image. Thus, it would not have been obvious to merely remove the diffusive screen and achieve the claimed invention. The claimed invention (independent claim 1 and all claims dependent thereon) is patentable.

In addition, now that generic claim 1 is patentable, the withdrawn dependent claims (2-14, 25-34, and 40) to species other than those claimed in dependent claims 15-24 can and should

be considered as noted in the Restriction Requirement mailed December 14, 2004. The same logic applies to independent claim 41 and dependent claim 42. It is respectfully requested that these claims be examined and allowed.

Independent claim 43 has been rejected based on Williams. Williams discloses a Head Mounted Display (HMD), not a HUD as stated in the Office Action. As is described in column 2 of Williams, his apparatus can be modified by the wearer to be either a single viewing display or a group viewing display (projector). Unlike Williams, modification of the display device of the claimed invention by the user is not needed. It is the same image-generating arrangement that is used to provide a real image of the image-generating arrangement in a first mode and a virtual image of the image-generating arrangement in a second mode, where the virtual image is not a reflection of the image-generating arrangement projected onto a projection screen. This distinction makes the invention of claims 43, 44, and 48-50 patentable.

Based upon the foregoing, Applicants believe that all pending claims are in condition for allowance and such disposition is respectfully requested. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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